

## SCH4U—Naming Hydrocarbons Assignment

1. Classify each of the following molecules as alcohol, aldehyde, ketone, carboxylic acid, amine or ether

<p>A</p> <pre>       H   H   H                 H — C — O — C — C — H                       H   H   H           </pre>	<p>D</p> <pre>       O          H — C — OH           </pre>
<p>B</p> <pre>       H   H   O                  H — C — C — C — H               \       H   H   H           </pre>	<p>E</p> <pre>       H   H   H   H                     H — C — C — C — N — H                       H   H   H           </pre>
<p>C</p> <pre>       H   H   O                  H — C — C — C — H               \       H   H   H           </pre>	<p>F</p> <pre>       H   O   H   H                     H — C — C — C — C — H                           H   H   H   H           </pre>

2. Write the formulas of the following compounds and state whether each one is a primary, secondary, or tertiary alcohol.

<p>2-methyl-2-propanol</p> <p>1°    2°    3°</p>	
<p>1-propanol</p> <p>1°    2°    3°</p>	
<p>6-bromo-4-ethyl-2-heptanol</p> <p>1°    2°    3°</p>	
<p>1-methylcyclopentanol</p> <p>1°    2°    3°</p>	

Isoheptyl alcohol	1°    2°    3°	
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3. Draw a structural formula for each of the following compounds

<b>2-methylhexane</b>	
<b>4-chlorobutanamide</b>	
<b>2,4-dimethylheptane</b>	
<b>4-heptanone</b>	
<b>3-methylpentanal</b>	
<b>hexanoic acid</b>	

<b>2-methyl-1-pentanol</b>	
<b>methyl benzoate</b>	
<b>2,3-dimethylheptane</b>	
<b>2-aminopropanal</b>	
<b>1-chloro-2-hexene</b>	
<b>2-bromobutanoic acid</b>	
<b>4,5-diisopropylnonane</b>	

<b>triethylamine</b>	
<b>cyclopentylcyclohexane</b>	
<b>3-methylbutanoic acid</b>	
<b>2-hydroxybutanal</b>	
<b>3-methyl-2-pentanone</b>	
<b>2,2-dichlorobutanoic acid</b>	
<b>1-methylcyclopentanol</b>	

<b>3-aminopentane</b>	
<b>2-methylpentanal</b>	
<b>aminocyclohexane</b>	
<b>ethanamide</b>	
<b>2-chlorobenzoic acid</b>	

4. Give the IUPAC name for each of the following structural compounds:

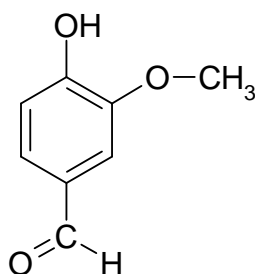

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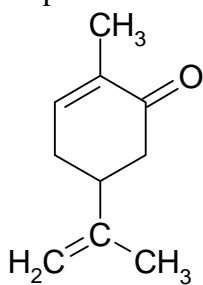
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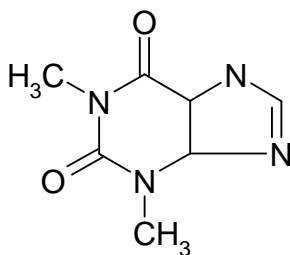

5. Identify all the functional groups in the following compounds
- a. Vanillin—the compound responsible for vanilla flavour



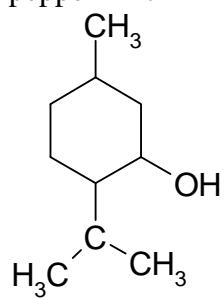
- b. Carvone—the compound responsible for spearmint flavour



- c. Caffeine—the stimulant in coffee, tea, and cola



- d. Menthol—the flavour of peppermint



- e. Estradiol—A female sex hormone

